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PAPERS
IN
CHEMISTRY.

No. I.

APPARATUS FOR CLEARING BEER.

The LARGE SILVER MEDAL was this session given to Mr. R. W. DICKINSON, of the Albany Brewery, Kent-road, on an APPARATUS FOR CLEARING BEER while in a state of fermentation. A model of the apparatus is placed in the Society's repository.

THE brightness of malt-liquor depends much on the accuracy with which the yeast produced by fermentation is separated; and the usual method of effecting this is the following.

The wort, after being duly boiled with the proper quantity of hops, is transferred into coolers, and, when its temperature has thereby been sufficiently lowered, it is removed to a large vessel called the gyle-tun, either open or fitted with a moveable cover. Here, after being mixed with yeast, it undergoes the first fermentation. The half-fermented liquor is then put into barrels lying on their sides, with the bung-hole uppermost, out of which the yeast is continually discharging itself, till the fermentation has ceased, or nearly so. During this time the barrels are examined once, twice, or oftener, in the day, and are filled up with fresh liquor in proportion as the yeast works off, so that the barrels shall be always full, in order that the yeast, as soon as it rises to the surface of the liquor, shall flow off entirely.

The object of Mr. Dickinson has been to conduct the whole of the fermentation in the barrel in which the beer is stored, and at the same time to provide for the escape of the yeast without the constant attention and expense of filling up as commonly practised.

For this purpose he places the barrels upright, and, having filled them with the wort previously boiled and cooled and mixed with the proper quantity of yeast, adapts to each barrel the following apparatus.

It consists of a tub *c c*, fig. 1, plate I., about the size of a peck measure, with a wooden cover *e e*, and having a vertical open pipe of pewter *b*, passing through the bottom: this pipe rises nearly to the top of the tub, and almost as soon as it has passed through the bottom expands into a broad flat margin, in order that it may be placed securely over the bung-hole of the barrel *a a*, with paper packing if required. Into the tub is put liquor of the same kind as that with which the barrel is filled, except that it is not previously mixed with yeast: the quantity of the liquor (about one-twelfth) is such as will be rather more than sufficient to supply the loss in the barrel in consequence of the fermentation. As soon as this process begins, the yeast, rising to the surface of the liquor in the barrel, passes through the bung-hole into the pewter pipe, and flows out of the upper end of it into the tub, the lighter particles, in the state of froth, floating on the surface of the liquor, and the heavier ones subsiding to the bottom. The vacuity occasioned by the separation of the yeast is continually supplied from the clear liquor in the tub, which flows in through the lateral hole *d,* in the vertical pipe.

It is the opinion of Mr. Dickinson, that by the adoption of the above described apparatus he saves about one and a half per cent. in quantity, and that the quality of the liquor is also considerably improved, besides avoiding the use of the gyle-tun, and the expense and loss of transferring the liquor therefrom to the barrels, and the loss of liquor in filling up according to the usual mode.